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IN THE CLAIMS

1. (Currently amended) A digital signal processing apparatus for executing a plurality of operations, comprising a plurality of functional units (10)-wherein each functional unit (10) is adapted to execute operations, and control means for controlling said functional units (10), characterized in that said control means comprises a fetch unit, a decode unit, and a plurality of control units (12) responsive to said decode unit, wherein at least one control unit (12) is operatively associated ~~to any~~ with a respective functional unit (10), respectively, for controlling its function, and each functional unit (10) is adapted to execute operations in an autonomous manner under control ~~by of~~ the control unit (12) associated ~~theretothere~~ therewith.

2. (Currently amended) Apparatus according to claim 1, characterized by FIFO (first-in/first-out) register means (14) adapted for supporting data-flow communication among said functional units (10).

3. (Currently amended) A digital signal processing apparatus for executing a plurality of operations, comprising a plurality of functional units (10)-wherein each functional unit (10) is adapted to execute operations, and control means for controlling said functional units (10) in coordination with one another in response to a single fetch unit and a single decode unit, characterized by FIFO (first-in/first-out) register means (14) adapted for supporting data-flow communication among said functional units (10).

4. (Cancel)

5. (Currently amended) Apparatus according to any one of claims 2, characterized in that said FIFO register ~~(14)~~ means comprises a plurality of FIFO registers.

6. (Currently amended) Apparatus according to claim 1, characterized in that each of said functional units ~~(10)~~ are provided with at least one control unit ~~(12)~~.

7. (Currently amended) Apparatus according to claim 1, which apparatus is adapted to ~~execute~~ form a pipeline consisting of a plurality of stages, wherein each stage is executed by a functional unit ~~(10)~~.

8. (Currently amended) Apparatus according to claim 1, characterized in that for each control unit ~~(12)~~ an instruction register and a counter are provided, where-in said counter indicates the number of times an instruction stored in said instruction register has to be executed by the corresponding functional unit ~~(10)~~.

9. (Currently amended) Apparatus according to claim 1, further comprising a program memory means ~~(6)~~ storing a main program, characterized in that said main program contains directives for instructing said control units.

10. (Currently amended) A method for processing digital signals in a digital signal processing apparatus, comprising a plurality of functional units ~~(10)~~ wherein each

functional unit (10) is adapted to execute operations, characterized in that said functional units (10) are controlled by control means including a single fetch unit, a single decode unit and a plurality of control units (12) wherein at least one control unit (12) is operatively associated ~~to any functional~~ with a respective unit (10), respectively, so that each functional unit (10) is able to execute operations in an autonomous manner under control ~~by of the control unit (12) associated thereto~~ therewith.

11. (Currently amended) ~~Method~~ Apparatus according to claim 9, characterized in that data-flow communication among said functional units (10) is supported by FIFO (first-in/first-out) register means (14).

12. (Cancel)

13. (Currently amended) ~~Method~~ Apparatus according to claim 11, wherein a pipeline consisting of a plurality of stages is provided, and each stage is executed by a functional unit (10).

14. (Currently amended) ~~Method~~ Apparatus according to claim 10, characterized in that the number of times an instruction stored has to be executed by a functional unit (10) is counted by the corresponding control unit (12).

15. (Currently amended) Method according to ~~any one of claims 9 to 14~~ claim 9, wherein

a main program is stored in a program memory means (6), characterized in that said main program contains directives for instructing said control units.

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